

WHAT IS CLAIMED IS:

1. An anti-IFN- α monoclonal antibody which binds to and neutralizes a biological activity of at least IFN- α subtypes, IFN- α 1, IFN- α 2, IFN- α 4, IFN- α 5, IFN- α 8, IFN- α 10, and IFN- α 21.
2. The antibody of claim 1 which is a murine antibody.
3. The antibody of claim 1 which is a humanized antibody.
4. The antibody of claim 1 which is a human antibody.
5. The antibody of claim 1 wherein said biological activity is antiviral activity.
6. The antibody of claim 5 wherein said antibody is capable of neutralizing at least 70% of the antiviral activity of said IFN- α subtypes.
7. The antibody of claim 5 wherein said antibody is capable of neutralizing at least 80% of the antiviral activity of said IFN- α subtypes.
8. The antibody of claim 5 wherein said antibody is capable of neutralizing at least 90% of the antiviral activity of said IFN- α subtypes.
9. The antibody of claim 5 wherein said antibody is capable of neutralizing at least 99% of the antiviral activity of said IFN- α subtypes.
10. The antibody of claim 1 which binds essentially the same IFN- α epitope as murine anti-human IFN- α monoclonal antibody 9F3 or a humanized or chimeric form thereof.
11. The antibody of claim 1 which is murine anti-human IFN- α monoclonal antibody 9F3 or a humanized or chimeric form thereof.
12. The antibody of claim 11 which is humanized anti-human IFN- α monoclonal antibody 9F3 version 13 (V13).
13. The antibody of claim 1 which binds essentially the same IFN- α epitope as the anti-IFN- α antibody produced by the hybridoma cell line deposited with ATCC on January 18, 2001 and having accession No. PTA-2917.
14. The antibody of claim 1 which is of the IgG class.
15. The antibody of claim 14 which has an IgG₁, IgG₂, IgG₃, or IgG₄ isotype.
16. The antibody of claim 1 which is an antibody fragment.
17. The antibody of claim 16 which is a Fab fragment.

18. The antibody of claim 16 which is a F(ab')₂ fragment.

19. The antibody of claim 16 which is a Fab' fragment.

20. An anti-IFN- α antibody light chain or a fragment thereof, comprising the following CDR's:

- L1 of the formula RASQSVSTSSYsymH (SEQ ID NO: 7);
- L2 of the formula YASNLES (SEQ ID NO: 8); and
- L3 of the formula QHSGWGPRTF (SEQ ID NO: 9).

21. The anti-IFN- α antibody light chain fragment of claim 20 which is the light chain variable domain.

22. An anti-IFN- α antibody heavy chain or a fragment thereof, comprising the following CDR's:

- H1 of the formula GYTFTEYIIH (SEQ ID NO: 10);
- H2 of the formula SINPDYDITNYNQRFKG (SEQ ID NO: 11); and
- H3 of the formula WISDFFDY (SEQ ID NO: 12).

23. The anti-IFN- α antibody heavy chain fragment of claim 22 which is the heavy chain variable domain.

24. An anti-IFN- α antibody comprising

(A) at least one light chain or a fragment thereof, comprising the following CDR's:

- L1 of the formula RASQSVSTSSYsymH (SEQ ID NO: 7);
- L2 of the formula YASNLES (SEQ ID NO: 8); and
- L3 of the formula QHSGWGPRTF (SEQ ID NO: 9); and

(B) at least one heavy chain or a fragment thereof, comprising the following CDR's:

- H1 of the formula GYTFTEYIIH (SEQ ID NO: 10);
- H2 of the formula SINPDYDITNYNQRFKG (SEQ ID NO: 11); and
- H3 of the formula WISDFFDY (SEQ ID NO: 12).

25. The antibody of claim 24 having a homo-tetrameric structure composed of two disulfide-bonded antibody heavy chain-light chain pairs.

26. The antibody of claim 24 which is a linear antibody.

27. The antibody of claim 24 which is a murine antibody.

28. The antibody of claim 24 which is a chimeric antibody.

29. The antibody of claim 24 which is a humanized antibody.

30. The antibody of claim 24 which is a human antibody.

31. An isolated nucleic acid molecule encoding an antibody of claim 1.

32. An isolated nucleic acid molecule encoding an antibody of claim 11.

33. An isolated nucleic acid molecule encoding an antibody of claim 12.

34. An isolated nucleic acid molecule encoding an antibody of claim 24.

35. An isolated nucleic acid molecule encoding an antibody light chain or light chain fragment of claim 20.

36. An isolated nucleic acid molecule encoding an antibody heavy chain or heavy chain fragment of claim 22.

37. An isolated nucleic acid molecule comprising the light chain polypeptide - encoding nucleic acid sequence of the vector deposited with ATCC on January 9, 2001 and having accession No. PTA-2882.

38. An isolated nucleic acid molecule comprising the heavy chain polypeptide-encoding nucleic acid sequence of the vector deposited with ATCC on January 9, 2001 and having accession No. PTA-2881.

39. A vector comprising a nucleic acid molecule according to any one of claims 31 to 38.

40. A host cell transformed with a nucleic acid molecule according to any one of claims 31 to 38.

41. A method of producing the antibody of any one of claims 1, 11, 12 and 24 comprising culturing a host cell comprising a nucleic acid sequence encoding the antibody under conditions wherein the nucleic acid sequence is expressed to produce the antibody.

42. A hybridoma cell line comprising a nucleic acid molecule according to any one of claims 31 to 38.

43. A hybridoma cell line deposited with ATCC on January 18, 2001 and having accession No. PTA-2917.

44. An antibody produced by the hybridoma cell line of claim 42.

45. A pharmaceutical composition comprising an effective amount of the antibody of claim 1 in admixture with a pharmaceutically acceptable carrier.

46. A pharmaceutical composition comprising an effective amount of the antibody of claim 11 in admixture with a pharmaceutically acceptable carrier.

47. A pharmaceutical composition comprising an effective amount of the antibody of claim 12 in admixture with a pharmaceutically acceptable carrier.

48. A pharmaceutical composition comprising an effective amount of the antibody of claim 24 in admixture with a pharmaceutically acceptable carrier.

49. A method for diagnosing a condition associated with the expression of IFN- α in a cell, comprising contacting said cell with an anti-IFN- α antibody of claim 1, and detecting the presence of IFN- α .

50. A method for the treatment of a disease or condition associated with the expression of IFN- α in a patient, comprising administering to said patient an effective amount of an anti-IFN- α antibody of claim 1.

51. The method of claim 50 wherein said patient is a mammalian patient.

52. The method of claim 51 wherein said patient is human.

53. The method of claim 52 wherein said disease is an autoimmune disease.

54. The method of claim 53 wherein said disease is selected from the group consisting of insulin-dependent diabetes mellitus (IDDM); systemic lupus erythematosus (SLE); and autoimmune thyroiditis.